

3. Dante

Program Name: Dante.java

Input File: dante.dat

Dante is a new kid at your school, and he LOVES prime numbers. You are playing a game with him lately, where he gives you two numbers, and you determine how many prime numbers are in between these numbers (not inclusive).

Input: The input will begin with an integer, n ($0 < n \leq 1000$), denoting the number of test cases to follow. Each test case will consist of two integers, separated by a space, a and b ($0 < a < b \leq 100,000$), denoting the beginning and end of the range of numbers you are to search through to find out how many prime numbers lie within this range.

Output: For each test case, output the number of prime numbers between a and b .

Sample input:

```
3
4 15
10 14
8 11
```

Sample output:

```
4
2
0
```